

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A rotary valve comprising:
 - a valve body;
 - a seal structure, carried by said valve body, said seal structure including opposing first and second annular seal cartridge members and a resilient annular seal to form a seating surface wherein the first and second seal cartridge members form a cavity to receive said resilient annular seal such that said annular seal inwardly protrudes from said cavity, said cavity having an elliptical configuration to deform said resilient annular seal to an elliptical shape;
 - a shaft having a first longitudinal portion disposed externally of said valve, and a second longitudinal portion disposed internally of said valve;
 - a disc operably connected to said second longitudinal portion and rotatably carried by said valve body, said disc having an elliptical periphery rotatable into and out of sealing engagement with said seating surface.
2. (Canceled)
3. (Canceled)
4. (Previously presented) The rotary valve of Claim 1 wherein:
 - said annular seal member has a radially outer peripheral portion clamped between opposing portions of said first and second seal cartridge members.

5. (Previously presented) The rotary valve of Claim 1 wherein:
said annular seal member is of a metal material and is resiliently deformable to said elliptical configuration in response to engagement by said elliptical periphery of said disc.
6. (Original) The rotary valve of Claim 1 wherein:
said valve body has an interior, and
said rotary valve further comprises abutting fixed geometry structures carried by said valve body and said disc and functioning to hold said disc in a precisely centered orientation within said interior of said valve body.
7. (Previously presented) The rotary valve of Claim 6 wherein:
said disc is rotatable relative to said valve body about an axis, and
said abutting fixed geometry structures include:
first and second guide structures spaced apart along said axis, and extending inwardly into said interior of said valve body, and
a mounting structure carried by said disc and having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures.
8. (Previously presented) The rotary valve of Claim 7 wherein:
said valve body has an annular shape with diametrically opposite, parallel flat areas formed on the exterior periphery thereof and spaced apart along said axis, said flat areas having openings extending radially therethrough and removably receiving said first and second guide structures, and
said first and second guide structures have enlarged portions abutting said flat areas and preventing further movement of said first and second guide structures into said interior of said valve body.
9. (Currently amended) The rotary valve of Claim 7 further comprising;
[[a]] said shaft rotatably locked to said disc, said shaft having a longitudinal portion rotatably extending through one of said first and second guide structures.

10. (Original) the rotary valve of Claim 7 wherein one of said first and second guide structures has a portion rotatably coupled to said mounting structure.
11. (Currently amended) The rotary valve of Claim 1 further comprising:
[[a]] said shaft having a first longitudinal portion extending inwardly through said valve body and being rotationally locked to said disc, and a second longitudinal portion disposed externally of said valve body and being drivingly rotatable to cause a corresponding rotation of said disc about said axis, and
an actuator support structure secured to the exterior of said valve [[a]] body and being connectable directly to an actuator useable to drivingly rotate said second longitudinal portion of said shaft.
12. (Original) The rotary valve of Claim 11 wherein said actuator support structure is of a one-piece construction and is removably secured to said valve body.
13. (Previously presented) The rotary valve of Claim 12 wherein:
said valve body has a generally annular configuration with a circumferentially spaced pair of flat areas formed on the external periphery of said valve body on opposite sides of said second longitudinal portion of said shaft, and
said one-piece actuator support structure has a generally inverted U-shaped configuration with a spaced pair of leg portions with free end portions removably secured to said flat areas of said valve body, and a closed outer end portion to which a valve actuator may be directly secured.

14. (Currently Amended) A rotary valve comprising:
 - a valve body having an interior defining a flow passage;
 - a seal structure carried by said valve body and defining a seating surface;
 - a disc carried within said valve body interior for rotation relative to said valve body about an axis and having a periphery rotatable into and out of sealing engagement with said seating surface;
 - a shaft having a first longitudinal portion rotationally locked to said disc, and a second longitudinal portion disposed externally of said valve body; and
 - abutting fixed geometry structures carried by said valve body and said disc, including first and second stationary guide structures carried by said valve body and spaced apart along said axis, said guide structures extending inwardly into said interior flow passage of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second stationary guide structures such that said first longitudinal portion of said shaft rotatably extends into one of said first and second stationary guide structures wherein said stationary guide structures function to hold said disc in a centered orientation within said interior of said valve body.
15. (Canceled)

16. (Currently amended) A rotary valve comprising:
a valve body having an interior;
a seal structure carried by said valve body and defining a seating surface;
a disc carried within said valve body interior for rotation relative to said valve body
about an axis and having a periphery rotatable into and out of sealing
engagement with said seating surface;
a shaft having a first longitudinal portion rotationally locked to said disc, and a second
longitudinal portion disposed externally of said valve body; and
abutting fixed geometry structures carried by said valve body and said disc, including
first and second stationary guide structures carried by said valve body and
spaced apart along said axis, said guide structures extending inwardly into said
interior of said valve body, and a mounting structure carried by said disc
having oppositely facing surfaces spaced apart along said axis and abutting
said first and second stationary guide structures such that said first
longitudinal portion of said shaft rotatably extends into one of said first and
second stationary guide structures wherein said stationary guide structures
function to hold said disc in a centered orientation within said interior of said
valve body, and The rotary valve of Claim 14 wherein:
said valve body has an annular shape with diametrically opposite, parallel flat areas
formed on the exterior periphery thereof and spaced apart along said axis, said
flat areas having openings extending radially therethrough and removably
receiving said first and second guide structures, and
said first and second guide structures have enlarged portions abutting said flat areas
and preventing further movement of said first and second guide structures into
said interior of said valve body.

17. (Canceled)

18. (Canceled)

19. (Currently Amended) A rotary valve comprising:
a valve body having an interior;
a seal structure carried by said valve body and defining a seating surface;

a disc rotatably carried by said valve body and having a periphery rotatable into and out of sealing engagement with said seating surface;
a shaft having a first longitudinal portion rotationally locked to said disc, and a second longitudinal portion disposed externally of said valve body and being drivingly rotatable to cause a corresponding rotation of said disc;
abutting fixed geometry structures carried by said valve body and said disc including non-rotating first and second guide structures spaced apart along said axis and extending inwardly into said interior of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures such that said first longitudinal portion of said shaft rotatably extends through one of said first and second guide structures wherein said guide structures function to hold said disc in a precisely centered orientation within said interior of said valve body; and
an actuator support structure secured to the exterior of said valve body and being connectable directly to an actuator useable to drivingly rotate said second longitudinal portion of said shaft.

20. (Original) The rotary valve of Claim 19 wherein said actuator support structure is of a one-piece construction.
21. (Original) The rotary valve of Claim 19 wherein said actuator support structure is removably secured to said valve body.

22. (Currently Amended) A rotary valve comprising:
a valve body;
a seal structure carried by said valve body and defining a seating surface;
a disc rotatably carried by said valve body and having a periphery rotatable into and
out of sealing engagement with said seating surface;
a shaft having a first longitudinal portion rotationally locked to said disc, and a second
longitudinal portion disposed externally of said valve body and being
drivingly rotatable to cause a corresponding rotation of said disc;
abutting fixed geometry structures carried by said valve body and said disc including
first and second guide structures spaced apart along said axis and extending
inwardly into said interior of said valve body, and a mounting structure carried
by said disc having oppositely facing surfaces spaced apart along said axis and
abutting said first and second guide structures such that said first longitudinal
portion of said shaft rotatably extends through one of said first and second
guide structures wherein said guide structures function to hold said disc in a
precisely centered orientation within said interior of said valve body; and
an actuator support structure removably secured to the exterior of said valve body and
being connectable directly to an actuator useable to drivingly rotate said
second longitudinal portion of said shaft, and The rotary valve of Claim 21
wherein:
said valve body has a generally annular configuration with a circumferentially spaced pair of flat areas formed on the external periphery of said valve body on opposite sides of said second longitudinal portion of said shaft, and said one-piece actuator support structure has a generally inverted U-shaped configuration with a spaced pair of leg portions with free end portions removably secured to said flat areas of said valve body, and a closed outer end portion to which a valve actuator may be directly secured.

23-32. (Canceled)

33. (Currently amended) A rotary valve comprising:

- a valve body;
- a shaft;
- a seal assembly coupled to the valve body, the seal assembly including first and second retainers housing a resilient annular seal, the resilient annular seal forming a sealing surface protruding inwardly from the valve body;
- a rotatable disc mounted in the valve body and operably coupled to the shaft, the disc having an elliptical periphery; and
- an elliptical cavity formed between the first and second retainers [[retrainers]], the elliptical cavity arranged to deform the resilient annular seal to an elliptical shape.

34. (Previously presented) A rotary valve comprising:

- a valve body having a flow path;
- a seal assembly carried by the valve body and defining a sealing surface;
- a shaft;
- a disc carried within the valve body flow path for rotation relative to the valve body about an axis and having a periphery rotatable into and out of sealing engagement with the sealing surface;
- first and second stationary guides carried by the valve body and abutting opposing portions of the disc, the guides spaced apart along the axis, wherein the guides extend inward into the flow path and further wherein the shaft extends into one of the first and second guides.